

LISTING OF CLAIMS

1. (currently amended) A nitride semiconductor laser device comprising a nitride semiconductor substrate (101); a nitride semiconductor layer that has an n-type semiconductor layer (102), an active layer (104) and a p-type semiconductor layer (103) laminated on or above the nitride semiconductor substrate (101), and has a stripe-shaped waveguide region for laser light; and end surface protective films (108, 109) on the both end surface of resonance sandwiching to the waveguide region, wherein

the nitride semiconductor substrate (101) has a luminescent radiation region (112) that absorbs light emitted from the active layer (104) and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light, and
at least one of the end surface protective films (108, 109) have a high higher reflectivity for the wavelength of the luminescent radiation from the luminescent radiation region (112),
and have a lower reflectivity for the wavelength of the emitted light from the active layer.

2. (currently amended) The nitride semiconductor laser device according to claim 1, wherein the end surface protective films (108, 109) are located on the end surfaces both on the emission side and the rear side.

3. (canceled)

4. (currently amended) The nitride semiconductor laser device according to claim 1, wherein the end surface protective films (108, 109) have a single-layer or multilayer structure.

5. (currently amended) A nitride semiconductor laser device comprising a nitride semiconductor substrate (101); a nitride semiconductor layer that has an n-type semiconductor layer (102), an active layer (104) and a p-type semiconductor layer (103) laminated on or above the nitride semiconductor substrate (101), and has a stripe-shaped waveguide region for laser light; and an emission-side end surface protective film and a rear-side end surface protective film opposed thereto on the end surfaces resonance sandwiching to the waveguide region, wherein

the nitride semiconductor substrate (101) has a luminescent radiation region (112) that absorbs light emitted from the active layer (104) and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light, and the rear-side end surface protective film includes a first end surface protective film having a high reflectivity for the wavelength of the luminescent radiation, and a second end surface protective film having a high reflectivity for the wavelength of the emitted light from the active layer (104), wherein the emission-side end surface protective film includes a third end surface protective film having a high reflectivity for the wavelength of the luminescent radiation and having a lower reflectivity for the wavelength of the emitted light from the active layer.

6. (currently amended) The A nitride semiconductor laser device ~~according to claim 5,~~ comprising:

a nitride semiconductor substrate;

a nitride semiconductor layer that has an n-type semiconductor layer, an active layer and a p-type semiconductor layer laminated on or above the nitride semiconductor substrate, and has a stripe-shaped waveguide region for laser light; and

an emission-side end surface protective film and a rear-side end surface protective film opposed thereto on the end surfaces of resonance sandwiching the waveguide region, wherein

the nitride semiconductor substrate has a luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light,

the rear-side end surface protective film includes a first end surface protective film having a higher reflectivity for the wavelength of the luminescent radiation, and a second end surface protective film having a higher reflectivity for the wavelength of the emitted light from the active layer,

the emission-side end surface protective film includes a third end surface protective film having a higher reflectivity for the wavelength of the luminescent radiation, and

wherein the first end surface protective film and/or the third end surface protective film has a low reflectivity for the wavelength of the emitted light from the active layer (104).

7. (currently amended) The nitride semiconductor laser device according to claim 5, wherein the emission-side end surface protective film includes a fourth end surface protective film having a ~~high~~ higher reflectivity for the wavelength of the emitted light from the active layer (104).

8. (currently amended) The nitride semiconductor laser device according to claim 7, wherein each of the first, second, third and fourth end surface protective films (108, 109) has a single-layer or multilayer structure.

9. (currently amended) ~~The~~ A nitride semiconductor laser device ~~according to claim 5,~~
comprising:

a nitride semiconductor substrate;

a nitride semiconductor layer that has an n-type semiconductor layer, an active layer and a p-type semiconductor layer laminated on or above the nitride semiconductor substrate, and has a stripe-shaped waveguide region for laser light; and

an emission-side end surface protective film and a rear-side end surface protective film opposed thereto on the end surfaces of resonance sandwiching the waveguide region, wherein

the nitride semiconductor substrate has a luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light,

the rear-side end surface protective film includes a first end surface protective film having a higher reflectivity for the wavelength of the luminescent radiation, and a second end surface protective film having a higher reflectivity for the wavelength of the emitted light from the active layer,

the emission-side end surface protective film includes a third end surface protective film having a higher reflectivity for the wavelength of the luminescent radiation, and

wherein the first and second end surface protective films are laminated so as to at least partially overlap each other.

10. (previously presented) The nitride semiconductor laser device according to claim 8, wherein the third and fourth end surface protective films are laminated so as to at least partially overlap each other.

11. (previously presented) The nitride semiconductor laser device according to claim 5, wherein the second end surface protective film is formed in contact with the nitride semiconductor layer.

12. (previously presented) The nitride semiconductor laser device according to claim 7, wherein the fourth end surface protective film is formed in contact with the nitride semiconductor layer.

13. (currently amended) The nitride semiconductor laser device ~~according to claim 1,~~
comprising:

a nitride semiconductor substrate;

a nitride semiconductor layer that has an n-type semiconductor layer, an active layer and a p-type semiconductor layer laminated on or above the nitride semiconductor substrate, and has a stripe-shaped waveguide region for laser light; and

end surface protective films on the both end surface of resonance sandwiching the waveguide region, wherein

the nitride semiconductor substrate has a luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light,

at least one of the end surface protective films have a higher reflectivity for the wavelength of the luminescent radiation from the luminescent radiation region, and

wherein the luminescent radiation region (112) has a low lower dislocation density as compared with the periphery thereof.

14. (currently amended) The A nitride semiconductor laser device ~~according to claim 1,~~
comprising:

a nitride semiconductor substrate;

a nitride semiconductor layer that has an n-type semiconductor layer, an active layer and a p-type semiconductor layer laminated on or above the nitride semiconductor substrate, and has a stripe-shaped waveguide region for laser light; and
end surface protective films on the both end surface of resonance sandwiching the waveguide region, wherein
the nitride semiconductor substrate has a luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light,
at least one of the end surface protective films have a higher reflectivity for the wavelength of the luminescent radiation from the luminescent radiation region, and
~~wherein~~ the luminescent radiation region (112) has a high impurity concentration as compared with the periphery thereof.

15. (original) The nitride semiconductor laser device according to claim 14, wherein the impurity is at least one element selected from the group consisting of H, O, C and Si.

16. (currently amended) ~~The~~ A nitride semiconductor laser device ~~according to claim 1,~~
comprising:

a nitride semiconductor substrate;
a nitride semiconductor layer that has an n-type semiconductor layer, an active layer and a p-type semiconductor layer laminated on or above the nitride semiconductor substrate, and has a stripe-shaped waveguide region for laser light; and
end surface protective films on the both end surface of resonance sandwiching the waveguide region, wherein
the nitride semiconductor substrate has a luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light,
at least one of the end surface protective films have a higher reflectivity for the wavelength of the luminescent radiation from the luminescent radiation region,
~~wherein~~ the active layer (104) has a light emission wavelength of 390 to 420 nm, and

the luminescent radiation has a wavelength of 550 to 600 nm.

17. (canceled)

18. (currently amended) The nitride semiconductor laser device according to ~~claim 1~~ claim 13, wherein the luminescent radiation region (112) is formed in a stripe shape substantially parallel to the waveguide region.

19. (currently amended) The nitride semiconductor laser device according to ~~claim 1~~ claim 18, wherein the waveguide region is formed above the luminescent radiation region (112).

20. (currently amended) ~~The~~ A nitride semiconductor laser device ~~according to claim 1;~~
a nitride semiconductor substrate;
a nitride semiconductor layer that has an n-type semiconductor layer, an active layer and a
p-type semiconductor layer laminated on or above the nitride semiconductor substrate,
and has a stripe-shaped waveguide region for laser light; and
end surface protective films on the both end surface of resonance sandwiching the
waveguide region, wherein
the nitride semiconductor substrate has a luminescent radiation region that absorbs light
emitted from the active layer and emits luminescent radiation with a wavelength longer
than the wavelength of the emitted light,
at least one of the end surface protective films have a higher reflectivity for the wavelength
of the luminescent radiation from the luminescent radiation region, and
~~wherein~~ the waveguide region is formed in a region that is spaced away from the
luminescent radiation region (112).

21. (previously presented) A laser apparatus comprising the nitride semiconductor laser device according to claim 1, and a detector that detect the light emission of the nitride semiconductor laser device, wherein the detector has a spectral sensitivity in a wavelength λ_{ex} of the luminescent radiation higher than a wavelength λ_{LD} of the emitted light of the nitride semiconductor laser device.

22. (previously presented) A laser apparatus comprising the nitride semiconductor laser device according to claim 5, and a detector that detect the light emission of the nitride semiconductor laser device, wherein the detector has a spectral sensitivity in a wavelength λ_{ex} of the luminescent radiation higher than a wavelength λ_{LD} of the emitted light of the nitride semiconductor laser device.